

*A Monthly Publication of the Epidemiology Resource Center*

Volume 9, Issue 7

July 2006

## **The Best Offense Is a Good Defense**

### ***ISDH Food Protection Program Project Targets Food Safety and Security***

Travis Goodman, BS  
Food Defense Program Coordinator-South

Since September 11, 2001, we have become painfully aware that the U.S. is susceptible to intentional acts of terrorism. The enemy we now face does not directly meet us on the battlefield but chooses an asymmetrical type of warfare, which may include biological, chemical, or radiological weapons of mass destruction that are disseminated in new ways. For this reason, we must focus on raising our "index of suspicion" and think outside the box to be able to detect, diagnose, and eliminate any threats to public health as soon as possible to minimize the spread of illness and mortality.

On December 3, 2004, outgoing Health and Human Services Secretary Tommy Thompson said, "I, for the life of me, cannot understand why the terrorists have not attacked our food supply because it is so easy to do." The possibility of intentional attacks on our food supply is real and must not be ignored. Since more than 80 percent of all food safety and food defense activities are performed at the State or local levels, it is clear that we are on the front lines of protecting our food and agriculture infrastructure.

Consequently, we must work diligently to be prepared to: prevent an incident, protect the food and agriculture supply, effectively respond to an incident, and aid in recovery efforts after an incident.

The Indiana State Department of Health (ISDH) has been developing the Food Defense Project since June 2003. Two full-time Food Defense Coordinators have been coordinating this project for the ISDH. The project has primarily focused on food defense (intentional contamination of food) but has also incorporated many food safety efforts, because they are also related to a safe and secure food supply. The purpose of the Food Defense Project is to protect the Indiana food and agriculture system from terrorist attacks, major disasters, and other emergencies. This will be accomplished by focusing on the entire system, utilizing a farm-to-fork protection strategy.

The ISDH initially focused on encouraging the food industry to implement food security preventive measures outlined in the federal guidance from the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA). Now the focus also includes

<u>Article</u>	<b>Page No.</b>
The Best Offense Is a Good Defense	1
HIV Medical Monitoring Project	3
Improving Your Health with Fruits and Vegetables	4
Outbreak Spotlight: Attendees at Holiday Buffet Share More than Good Wishes	8
Training Room	12
Data Reports	13
HIV Summary	13
Disease Reports	14

response and recovery. In accordance with other federal guidance outlined in Homeland Security Presidential Directive (HSPD)-8, HSPD-9, and Department of Homeland Security Target Capability-14, ISDH efforts have been categorized into four critical areas: **prevention, protection, response, and recovery.** The following provides a brief summary of what the ISDH has accomplished in these four critical areas to further protect the Indiana food and agriculture system. In addition, other Indiana stakeholders, such as the Indiana Board of Animal Health, Department of Agriculture, and Purdue University, have accomplished many additional food and agriculture defense efforts.

## **Prevention**

- Identified Indiana food and agriculture protection and defense stakeholders and established the Indiana Food Safety and Defense Task Force in 2003. This task force meets three times each year and serves as a forum for discussion on food and agriculture protection issues and provides guidance to the ISDH Food Defense Coordinators.
- Distributed FDA and USDA food security preventive measures guidance to 934 Indiana food processors in 2003.
- Distributed FDA food security preventive measures guidance to food safety/public health preparedness staff in Indiana's 94 local health departments in 2004.
- Conducted a food security preventive measures assessment survey of 934 Indiana food processors in 2004.
- Conducted a food security preventive measures assessment survey of Indiana confined-animal feeding operations in January 2006.
- Since March 2006, the ISDH has been conducting a food security preventive measures survey of 1,500 Indiana retail food establishments with a target completion date of March 2008.
- Meet with ISDH Public Health Preparedness District Councils as well as local health department food safety staff to raise awareness of food defense issues.

## **Protection**

- Developed and distributed food defense focus areas fact sheets to Indiana food processors based on the food security preventive measures assessment survey results.
- Completed over 80 food defense field consultations with Indiana food processors to help them develop a food security plan and implement food shields and mitigation strategies to deter intentional food contamination at their facilities.
- Attempted to collaborate with the Indiana insurance trade groups on return on investments for food producers, processors, and distributors that implement food security preventive measures.

## Response

- The ISDH sponsored a food defense tabletop exercise in March 2005. Over 100 government, industry, and academic stakeholders attended the exercise, which involved responding to an incident of intentional contamination at an Indiana food processor. Lessons learned from the after-action report will be addressed in the *ISDH Food Emergency Response Plan*.
- The ISDH sponsored a measured response computer simulation training exercise with Purdue University in July 2005. The lessons learned from this exercise will also be used to help with development of the *ISDH Food Emergency Response Plan*.
- The Food Defense Program Coordinators are developing an *ISDH Food Emergency Response Plan* to address incidents that overwhelm resources for effective response.

## Recovery

- The ISDH is developing a post-incident recovery plan for the food industry based on lessons learned from previous food contamination incidents.
- The ISDH is addressing the need for developing a plan for disposing of contaminated food or animal material both during and after an incident. This will be included in the *Food Emergency Response Plan*.

# HIV Medical Monitoring Project

Cheryl Percy, BS  
Medical Monitoring Project Program Manager

Indiana is one of 20 states and 6 cities selected to participate in the Medical Monitoring Project (MMP). The MMP is a new surveillance project funded by the Centers for Disease Control and Prevention (CDC) for HIV-positive citizens receiving primary medical care for their disease. It is also supported by the National Institutes of Health (NIH) and the Health Resources and Services Administration (HRSA).

Sites selected for this project are required to identify all physicians providing HIV primary medical care, which is defined as ordering CD4 counts, viral loads, and/or prescribing antiretroviral therapy. Once physicians are identified, they are then asked to supply the Estimated Patient Load (EPL) of HIV-positive patients they cared for during the previous year. Physicians who have a practice and share medical records are considered a single facility. Facilities are then assigned unique identifiers. The unique identifier and the EPL are then submitted to the CDC. The CDC, in turn, submits the information to the Rand Corporation, which randomly selects 40-60 facilities.

ISDH MMP staff will visit selected facilities and encourage providers to participate in the project, which entails supplying the list of HIV-positive patients they evaluated during April 1, 2006 to July 31, 2006. Patients on the list are then assigned unique identifiers, which are submitted to the

CDC. The CDC again provides this information to the Rand Corporation for a random selection of 400 patients.

Patients in the randomly selected group are then contacted by either their physician or directly by ISDH MMP staff and encouraged to participate in the project. Participants receive a \$25 gift card for their time. Patients are interviewed using a standard questionnaire, and questions focus on access to health care, unmet needs, sexual behavior, drug and alcohol history, and current HIV prevention activities. This information is sent to the CDC, where it is compiled and used in future guidance for implementation of HIV prevention and care services and State distribution of HIV dollars. The most recent national HIV surveillance project was conducted over 10 years ago. Since then, the nature of the disease has changed tremendously, requiring current relevant information to meet impact expectations. The MMP project is scheduled to run until 2008, but it is expected to be renewed through 2011.

Each selected patient will represent 20 citizens currently living with HIV in Indiana. The success of this project will require a high level of participation by both selected providers and patients. It is anticipated that selected physician offices will be contacted in mid-August 2006, and selected patient interviews will begin mid-September 2006.

## Improving Your Health with Fruits and Vegetables

Michael Wade, MPH, MS  
Syndromic Surveillance Epidemiologist

Linda Stemnock, BSPH  
Biostatistician

Keisha Banks-Thornton, MPH, CHES  
Health Education Program Director



“You are what you eat.” You know the old saying, and to a large degree, it is very true. Nutritional habits favoring foods high in saturated and trans fats and refined sugars are very often linked to adverse personal health conditions such as obesity, type-2 diabetes, cardiovascular disease, some cancers, osteoporosis, and the many challenges associated with them. (1) In contrast, a daily diet comprised of multiple servings of fresh fruits and vegetables, whole grains, and moderate amounts of lean protein is closely associated with lower morbidity and mortality rates relative to the aforementioned health conditions. In addition to being naturally low in fat, fruits and vegetables are packed with vitamins, minerals, antioxidants, fiber and many other substances, which, together, account for their beneficial health effects. Greater consumption of fruits and vegetables may also help individuals control their weight. The primary focus of this article is on how we can improve our health by increasing our intake of fruits and vegetables. The *Dietary Guidelines for Americans 2005* recommends that individuals try to consume 2 cups (4 servings) of a variety of fresh fruits and 2½ cups (5 servings) of vegetables daily for a reference 2,000 calorie intake, with higher or lower amounts depending on the calorie level.

A serving of a fruit or vegetable is equal to:

- ½ cup cut fresh fruits or vegetables
- ½ cup cooked vegetables
- 1 cup raw salad greens
- ¼ cup dried fruit
- ½ cup cooked beans or peas
- 1 medium size piece of fruit (e.g., an orange, medium apple)
- 6-oz cup of 100 percent juice

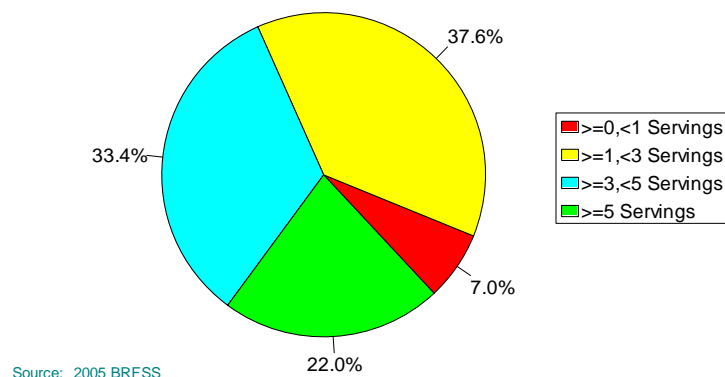
Variety and color are important. Regarding vegetables specifically, choose from these categories: dark green, orange, legumes, starchy vegetables, and other vegetables. (2) Further, fruits and vegetables with the most color tend to have a high nutrient content. Although these recommended serving quantities are based on a daily intake of 2,000 calories, they provide a useful, adjustable daily approximation. All fresh fruits and vegetables should be washed thoroughly before consumption. If not eaten raw, vegetables should be prepared in a low fat manner, thereby taking advantage of their high nutrient density and low fat attributes. There are many excellent low fat cookbooks now available with recipes that make the most of these foods.

How well are Hoosiers doing relative to their consumption of fruits and vegetables? In contrast to data related to many infectious diseases, there is no requirement to report behaviors such as fruit and vegetable consumption; hence, prevalence data must be obtained from another source. The Behavioral Risk Factor Surveillance System (BRFSS) is an annual, random-digit dial telephone survey of adults aged 18 years and older. The survey is conducted through a cooperative agreement with the Centers for Disease Control and Prevention (CDC). All 50 states and the District of Columbia participate. The information for this article was obtained from the 2005 BRFSS survey. (4)

Overall, only 22.0 percent of Indiana adults reported eating five or more fruit and vegetable servings daily in 2005, and approximately 45 percent consumed fewer than three servings per day (see Figure 1).

**Figure 1**

### **Adult Daily Fruit and Vegetable Consumption** Indiana 2005



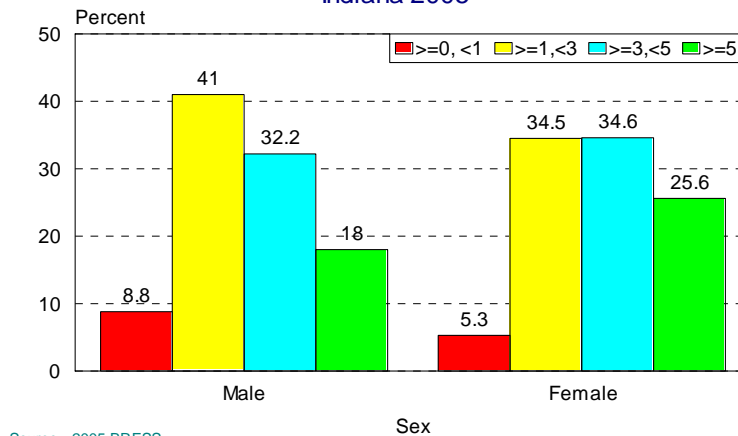
Females were significantly more likely than males to consume at least five fruit and vegetable servings daily (25.6% vs. 18.0%, respectively). Females were also significantly less likely than

males to consume either less than one or less than three servings daily (see Figure 2). There was no significant difference between males and females consuming three to fewer than five servings of fruits and vegetables daily. (4)

**Figure 2**

## Number of Daily Fruit and Vegetable Servings by Sex

Indiana 2005



Adults at risk for not eating at least five fruit and vegetable servings daily were more likely to be 18-64 years of age and have a high school education or less. Additionally, there were no significant differences between income levels (range of 20.3-22.8%) or race/ethnicity (range of 19.5-22.0%) for consuming five or more servings per day. Adults who consumed five or more servings daily were more likely to have a normal body mass index than to be considered obese based on reported height and weight (39.0% vs. 21.9%, respectively). (4) Lastly, the 2005 Indiana Youth Risk Behavioral Survey reveals a significant decrease in the percentage of students who ate five or more servings of fruits and vegetables in the past seven days (15.5%) in comparison to the 2003 results (20.3%). (5) Adults, especially parents, can be very positive role models and can greatly influence the nutritional habits of their children, which can have life long implications. (6)

Although the above data point out some deficiencies in our current level of fruit and vegetable consumption, we do have a great deal of control over the nutritional choices we make. Therefore, we have a tremendous opportunity to improve our health and spice up our meal times with fruits and vegetables. Summer is a great time for buying fresh produce, so what better time to go out there and takes steps toward healthy change?

### References

1. [Kennedy ET](#). *Evidence for nutritional benefits in prolonging wellness*, Am J Clin Nutr., 2006 Feb;83(2):410S-414S.
2. Nieman D. *The Exercise-Health Connection*, Human Kinetics, 1998.
3. Center for Nutrition Policy and Promotion, U.S. Department of Agriculture. *Dietary Guidelines for Americans 2005*, <http://www.health.gov/dietaryguidelines/dga2005/recommendations.htm>.
4. Behavioral Risk Factor Surveillance System, Indiana Statewide Survey Data, 2005.

5. Youth Risk Behavior Survey System, Indiana Statewide Survey Data, 2005.
6. [Zabinski MF](#), [Daly T](#), [Norman GJ](#), [Rupp JW](#), [Calfas KJ](#), [Sallis JF](#), [Patrick K](#).  
*Psychosocial correlates of fruit, vegetable, and dietary fat intake among adolescent boys and girls.* [J Am Diet Assoc](#). 2006 Jun;106(6):814-21.





## ***OUTBREAK SPOTLIGHT....***

“Outbreak Spotlight” is a regularly appearing feature in the *Indiana Epidemiology Newsletter* to illustrate the importance of various aspects of outbreak investigation. The event described below illustrates how an apparent foodborne outbreak may actually have had a different source.

### **Attendees at a Holiday Buffet Share More than Good Wishes**

Donna Allen, MS  
ISDH Field Epidemiologist



#### **Background**

On December 13, 2005, a local health department (LHD) notified the Indiana State Department of Health (ISDH) about several family members who had developed gastroenteritis, characterized primarily by diarrhea and vomiting, following a holiday buffet. A total of 93 individuals ate at the party. The meal was prepared by a local caterer.

#### **Epidemiologic Investigation**

The LHD and the ISDH initiated a cohort study to describe the outbreak and to determine whether the source may have been food related. The LHD obtained a menu of all food items served and a listing of party attendees. The ISDH developed a questionnaire which documented illness history, foods eaten, and other risk factors. LHD staff members conducted interviews and completed questionnaires for both ill and well individuals who attended the party, then forwarded completed forms to the ISDH field epidemiologist. A case was defined as any previously healthy person who ate at the party and became ill with diarrhea and/or vomiting on or after the date of the buffet.

Forty-one people were reported ill, with 39 out of the 93 attendees meeting the case definition. The attack rate was 42 percent. One individual was hospitalized due to severe gastroenteritis symptoms and released the next day. The cases ranged in age from 1 to 78 years, with the mean



age being 27 years. The predominant symptoms included: diarrhea (84%), vomiting (76%), nausea (70%), body aches (54%), and chills (54%). The incubation period ranged from 6-72 hours, with the median being 24 hours (Figure 1). Fifty interviews were completed on those who were not ill.

Based on the analysis of these data, no food item was statistically associated with illness. Several ill attendees reported secondary cases within their households, which would support the hypothesis of a disease agent that could also be transmitted person to person as well as through food. During the interviews, it was discovered that two families in attendance had children who experienced diarrhea at the party. One family reported having similar symptoms a week prior to the party. Stool samples were collected from three cases and forwarded to the ISDH Laboratory (see Laboratory Results).

## **Environmental Investigation**

A representative from the LHD visited the caterer and serving site to review food preparation practices. No critical violations were noted. Leftover food samples were collected and submitted to the ISDH Laboratory for analysis (see Laboratory Results). None of the caterers, cooks, or servers reported having any illnesses. The caterer also supplied food for other parties on the same evening with no illnesses being reported from the other functions. Two of the caterers submitted stool samples for analysis.

## **Laboratory Results**

Enteric samples from three cases and two caterers were submitted to the ISDH Laboratory for analysis. All tested negative for *Campylobacter*, *E. coli* O157:H7, *Salmonella*, and *Shigella*. The three ill case samples tested positive for *Norovirus* by use of reverse transcription-polymerase chain reaction (RT-PCR) assays. The stool samples from the caterers were negative for *Norovirus*.

Bacteriological tests were conducted for coliforms, *E. coli*, and *Salmonella*. However, no foodborne pathogens were identified in the food samples submitted.

## **Conclusion**

The causative agent of this outbreak was identified as *Norovirus*. Three cases were laboratory confirmed, and the illness was compatible among all cases. *Norovirus* (family Caliciviridae) comprises a group of viruses known to cause acute gastroenteritis in humans. Noroviruses are highly contagious, with an infective dose as low as 100 viral particles. Noroviruses are transmitted primarily through the fecal-oral route, either by direct person-to-person spread or through fecally contaminated food or water. Common symptoms include nausea, vomiting, and diarrhea, which resolve in about 24-48 hours. However, infected individuals can shed virus up to two weeks after symptoms cease.

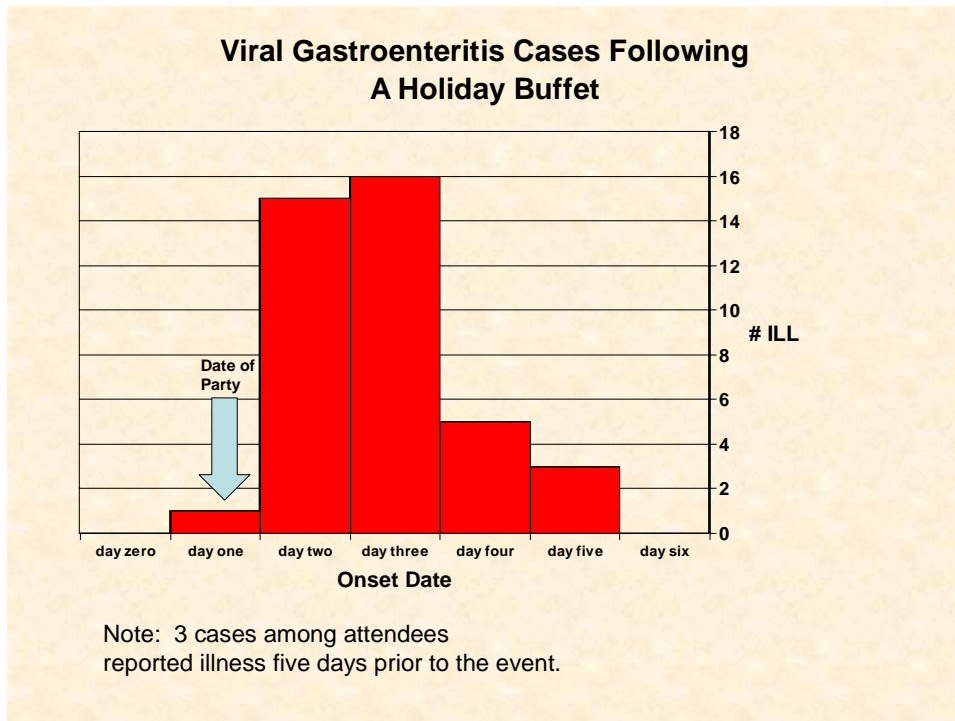
These viruses are relatively stable in the environment and can survive freezing and heating to 140 degrees Fahrenheit. The main symptoms experienced were diarrhea and vomiting, with a mean incubation period of 24 hours and duration of symptoms lasting 24-72 hours. This is consistent with a viral pathogen such as *Norovirus*.

Foodborne viral outbreaks can occur when an infected individual with inadequately washed hands handles food that is served raw or ready to eat (e.g., salads, vegetable trays, cookies, etc). In addition, touching surfaces or sharing contaminated food utensils or drinks can lead to virus transmission. However, this outbreak was more likely caused by person-to-person transmission rather than foodborne transmission. The food handlers tested negative for *Norovirus*, but family members reported that sick children attended the party. In addition, one family reported that family members had been ill with similar symptoms during the week before the party. Therefore, it was likely that various attendees were infected during the party, and transmission was likely facilitated by close contact among party attendees. The food was served in a self-serve buffet, which would make it easier to share contaminated food items. Schools and nursing homes in the county were reporting similar cases of disease, an indication that gastroenteritis was circulating in the community prior to the event. Therefore, the individuals who became ill may have consumed food which became externally contaminated at the dinner buffet or from person-to-person transmission among other families attending the party.

In general, most viral outbreaks can be prevented by strictly adhering to the following food safety practices:

1. Thoroughly wash hands with soap and water before preparing food, after using the restroom, before eating, and after changing diapers or assisting someone who is ill. Since some people may continue to shed the virus for several weeks after symptoms resolve, strict hand washing is important in preventing the spread of the virus.
2. Wash all fruits and vegetables prior to serving, especially if served raw.
3. Stay home if ill with diarrhea and vomiting. Food handlers should be excluded from work until symptoms cease.
4. Sick children and ill infants in diapers should be excluded from food preparation and serving areas.
5. Any food items that have been contaminated should be thrown out.
6. Any environmental surface suspected of contamination should be promptly cleaned, disinfected with bleach solution, and then rinsed.

**Figure 1**



## References

1. Norovirus: Food Handlers, CDC, Jan. 21, 2005, 1-5.
2. Norovirus in Healthcare Facilities, CDC, April 21, 2005, 1-3.
3. Norovirus Fact Sheet, Virginia Department of Health, [www.vdh.virginia.gov](http://www.vdh.virginia.gov).
4. "Norwalk-Like Viruses," Public Health Consequences and Outbreak Management, MMWR June 01, 2001/ 50 (RR09); 1-18



## INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:

### *Immunizations from A to Z*

Immunization Health Educators offer this FREE, one-day educational course that includes:

- Principles of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
  - Pandemic Influenza
- General Recommendations on Immunization
  - Timing and Spacing
  - Indiana Immunization Requirements
  - Administration Recommendations
  - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials, and certificate of attendance are provided to all attendees. Please see the Training Calendar for presentations throughout Indiana. Registration is required. To attend, schedule/host a course in your area or for more information, please contact Angie Schick **317.460.3671** or [aschick@isdh.IN.gov](mailto:aschick@isdh.IN.gov); or <http://www.IN.gov/isdh/programs/immunization.htm>

# ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

[http://www.IN.gov/isdh/dataandstats/data\\_and\\_statistics.htm](http://www.IN.gov/isdh/dataandstats/data_and_statistics.htm)

HIV/STD Quarterly Reports (1998-Dec 05)	Indiana Mortality Report (1999, 2000, 2001, 2002, 2003)
Indiana Cancer Incidence Report (1990, 95, 96, 97, 98)	Indiana Infant Mortality Report (1999, 2002, 2003, 2004)
Indiana Cancer Mortality Report (1990-94, 1992-96)	Indiana Natality Report (1998, 99, 2000, 2001, 2002, 2003, 2004)
Combined Cancer Mortality and Incidence in Indiana Report (1999, 2000, 2001, 2002)	Indiana Induced Termination of Pregnancy Report (1998, 99, 2000, 2001, 2002, 2003, 2004)
Indiana Health Behavior Risk Factors (1999, 2000, 2001, 2002, 2003, 2004, 2005)	Indiana Marriage Report (1995, 97, 98, 99, 2000, 2001, 2002)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (9/2003, 10/2003, 6/2004, 9/2004, 4/2005, 7/2005, 12/2005, 1/2006)	Indiana Infectious Disease Report (1997, 98, 99, 2000, 2001, 2002)
Indiana Hospital Consumer Guide (1996)	Indiana Maternal & Child Health Outcomes & Performance Measures (1990-99, 1991-2000, 1992-2001, 1993-2002)
Public Hospital Discharge Data (1999, 2000, 2001, 2002, 2003, 2004)	

## HIV Disease Summary

**Information as of June 30, 2006 (based on 2000 population of 6,080,485)**

### *HIV - without AIDS to date:*

<b>375</b>	New HIV cases from <b>July</b> 2005 thru <b>June</b> 2006	12-month incidence	6.52 cases/100,000
<b>3,625</b>	Total HIV-positive, alive and without AIDS on <b>June 30, 2006</b>	Point prevalence	63.02 cases/100,000

### *AIDS cases to date:*

<b>378</b>	New AIDS cases from <b>July</b> 2005 thru <b>June</b> 2006	12-month incidence	6.57 cases/100,000
<b>3,844</b>	Total AIDS cases, alive on <b>June 30, 2006</b>	Point prevalence	66.82 cases/100,000
<b>7,989</b>	Total AIDS cases, cumulative (alive and dead)		

## REPORTED CASES

 of selected notifiable diseases

Disease	Cases Reported in June MMWR Weeks 23-26		Cumulative Cases Reported January –June MMWR Weeks 1-26	
	2005	2006	2005	2006
Campylobacteriosis	22	34	136	178
Chlamydia	1,401	896	9,858	8,754
<i>E. coli</i> O157:H7	8	8	24	22
Hepatitis A	1	4	9	16
Hepatitis B	6	8	16	23
Invasive Drug Resistant <i>S. pneumoniae</i> (DRSP)	9	17	118	100
Invasive pneumococcal (less than 5 years of age)	0	6	34	36
Gonorrhea	593	291	3,916	3,614
Legionellosis	2	4	10	5
Lyme Disease	4	2	6	5
Measles	0	0	0	1
Meningococcal, invasive	5	3	13	13
Mumps	0	4	0	10
Pertussis	4	27	143	108
Rocky Mountain Spotted Fever	0	1	0	2
Salmonellosis	31	54	200	255
Shigellosis	2	14	43	68
Syphilis (Primary and Secondary)	5	2	36	32
Tuberculosis	14	15	68	67
Animal Rabies	2 (bats)	4 (bats)	4 (bats)	7 (bats)

**For information on reporting of communicable diseases in Indiana, call the *Epidemiology Resource Center* at (317) 233-7125.**



The *Indiana Epidemiology Newsletter* is published monthly by the Indiana State Department of Health to provide epidemiologic information to Indiana health care professionals, public health officials, and communities.

*State Health Commissioner*  
Judith A. Monroe, MD

*Editor*  
Pam Pontones, MA

*Deputy State Health Commissioner*  
Sue Uhl

*Contributing Authors:*  
Travis Goodman, BS  
Cheryl Percy, BS  
Michael Wade, MPH, MS  
Linda Stemnock, BSPH  
Keisha Banks Thornton, MPH, CHES  
Donna Allen, MS

*State Epidemiologist*  
Robert Teclaw, DVM, MPH, PhD

*Design/Layout*  
Mike Wilkinson, BS